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Abstract

Child labour in India is a critical socio-economic problem that needs special attention of policy makers. In order to make effective policies to reduce child labour it is important to understand the specific factors that affect it in different situations. The paper empirically examines these factors across 35 Indian states and union territories at three levels of aggregation: total population, rural/urban, and male/female. The results showed that education, fertility, and workforce participation are the major influencing factors in our models. Interestingly, impact of economic indicators of poverty and income differed among total, rural, urban, male, and female population. The explanatory powers of models showed large variations across different levels of aggregation and were stronger for total, rural and female population.

Key words: Child labour, education, fertility, workforce participation.

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FACTORS AFFECTING CHILD LABOUR IN INDIA

The acceleration of globalization in the world has drawn the focus of various international governments, labour organizations and the non-government bodies to develop more rigorous procedures for the protection of labour (Basu, 1999). This has become even more crucial today as these bodies are no longer able to protect the 'core' labour standards stated as essential to safeguard the interests of the labour (Castle, Chaudhri, Nyland, & Nguyen, 1997) especially the child labour. Child labour has emerged as a major international issue over the past decade. The International Labour Organization (ILO) faces several problems in ensuring the respect for its standards due to low rate of ratification by member countries (Basu, 1999; Castle et al., 1997).

The developed nations have continuously made demands for stringent labour clauses to be applied on the developing nations to control child labour. The developing nations are finding it more and more difficult to withstand this increasing pressure for prevention of child labour. This has led to the merging of trade issues with child labour clauses, and the pressure from US and EU has led to the changes been made to GATT dispute settlement procedures, which now empowers WTO to enforce whatever provisions its members choose to adopt (Castle et al., 1997). These actually pose serious problems to the developing nations. Even with the huge influence and demands laid by the developed countries, the issue of child labour is still one of the major problems faced in the developing nations. Countries in the Indian sub-continent (India, Pakistan and Bangladesh) have the world's largest number of child labour. Focus on India is of great importance as it is one of the fastest growing economies where child labour acts as a barrier in its overall development. Child labour has to be controlled for achieving the desired level of socio-economic growth and this puts policy makers in a dilemma over ways of eradicating it. The Government of India also adopted the formal mechanism to

control child labour in India in the form of the Child Labour (Prohibition & Regulation) Act, 1986[3].

The issue here is not only about the existence of this problem of child labour but also that initiatives for dealing with this problem are not being effective. In order to develop effective measures to counter this problem, better understanding of various factors affecting it is important. These factors are mainly related to the socio-economic aspects of our nation, which also determines the overall functioning of the labour market. This socio-economic problem is inextricably linked to poverty and illiteracy and requires concerted efforts from all sections of society to be solved. The other aspect of dealing with this issue is that these factors may not be affecting various segments of society in the same manner.

Conceptual Background

Child Labour Incidence

According to literature there is huge influence of community factors on both individual and household decisions that affects the phenomena like child labour in India (Singh, 2001). These factors have both positive and negative enforcements: positive known as virtuous spiral and negative as vicious spiral (Chaudhri, 1997a). The major factors that have emerged as the result of analysis are economic, demographic, educational and economic poverty. These major factors affect the involvement of children in the workforce in totality. This is due to the fact that in different contexts their significance and affect varies. The studies based on nation as a whole emphasise the influence of literacy and workers participation as the prominent ones (Lieten, 2002). Whereas the studies in which the unit of analysis has been more specific in terms of

[3] Source: http://labour.nic.in/cwl/ChildLabour.htm

urban-rural and male-female, the impact of these forces differ (Chaudhri, 1997a; Duraisamy, 1997; Lieten, 2002).

In order to study the factors that lead to the involvement of children in labour force, it is essential to understand it conceptually, especially when there are differences in the understanding of both the terms - 'child' and 'labour'. *The child labour incidence has been defined as the ratio of number of main and marginal workers in a given age group (5-14 years) to the number of children in the population in that age group* (Castle et al., 1997; Census of India, 2001; Duraisamy, 1997). In order to design the appropriate policies to properly target the specific problems which lead to child labour, there is a need to understand as to which factor is most prominent for a certain category (Lieten, 2002).

Classification of Child Labour in India

Child labour in India is mainly classified on following bases:

On the basis of region: Clear differences exist between the participation of children in the workforce on the basis of region: rural and urban. The work participation of children in rural areas is higher than that in urban areas (please see Table 1). But this rate is declining at a much faster rate in the rural areas than in urban areas (Chaudhri, 1997a). The types of employment activities and reasons for child labour vary between rural and urban areas.

Table 1: Percentage comparison of total, rural, urban, male, and female children (5-14 yrs)

Region	Child labour	Dependents, household duties, & others	Students
Total (5-14 years)	5.003%	29.753%	65.243%
Rural (5-14 yrs)	5.945 %	32.502%	61.553%
Urban (5-14 yrs)	2.120%	21.336%	76.543%
Male (5-14 yrs)	5.141%	26.528%	68.331%
Female (5-14 yrs)	4.853%	33.288%	61.860%

Source: Census of India, 2001 (for all the states and union territories)

On the basis of gender: In India, social factors create differences in the participation of male and female child in the workforce and so gender-based categorisation of child labour has been considered important (Chaudhri, 1997b). The major point of difference arises from the variations in the education level of both the male and female children which pushes them into diverse fields. Societal factors make male child to participate more due to patriarchic nature of the Indian society. On the other hand female child is mainly involved in household activities. The proportion of female children as dependants, household activities, and others is very high in comparison to male children, as they are not allowed to participate in the education and in several cases not even in the workforce. They are made to do work in the households, or to manage their homes due to employment commitment of their mothers (Chaudhri, 1997b).

These above stated differences on the bases of region and gender lead one to examine in detail the variations in factors affecting child labour in specific segments.

Factors affecting Child Labour

The factors that mainly affect the child labour in India are related to economic condition of families in terms of participation of its members in workforce and per-capita state domestic product. In addition the other important factors are education of children, fertility rate, and poverty. These all are related to specific aspects that either in totality or alone affects the involvement of child labour in India. The paper focuses on these factors and studies their effect on the child labour involvement in the nation as a whole, and also in the above mentioned categories based on region and gender.

Education of children: The studies have extensively focused on the education of the children as a crucial factor affecting child labour. The better the education status of the families the less will be their orientation towards sending children to work (Duraisamy,

1997). The educated families realise the need for children to study so they send their children to schools instead of work. Education has emerged as the most significant factor in controlling the rate of participation of children in workforce. There are lot of variations between the schooling status of children both for male and female and for rural and urban (Tilak, 1994). Policy makers have also emphasized the critical role played by primary education in controlling child labour (Weiner, 1996).

Workforce participation: The earlier studies in India have reported the positive influence of workforce participation rate on child labour incidence (Lieten, 2002). This is due to the labour market segmentation in India; in the condition of high demand for labour in lower segments the entire families are pulled. At times when the wages are not improved the male workers move to other areas so that more children are pulled to work (Lieten, 2002). Also the lower wage rates of children leads to their higher demand (Diamond & Fayed, 1998). .

Poverty: Below poverty line represents the poverty status of any place. It denotes to the number of people who are below the basic poverty line which has been decided on the basis of minimum calorie intake of the people. All those who are not even able to meet this minimum standard are said to be below poverty line. This depicts the basic economic and poverty status of a place. The more the number of people below poverty line, the more will be push for children to work and higher would be child labour incidence.

Per capita state domestic product: This factor is oriented towards the economic development of the region which is the focus of the study. The economic development of a state will increase the per-capita income (Chaudhuri, 1997a). This will lead to the improvement in the economic condition of the families of the region and ultimately the fall in the participation of children in workforce. This needs to be evaluated separately for both the male and female children, as there are arguments regarding increase in per-capita

income also leading to more participation of male children in some regions (Chaudhuri, 1997a; Duraisamy, 1997).

Fertility: Another crucial factor that has lead to more and more children entering into workforce is the fertility rate of the population (Chaudhuri, 1997a; Singh, 1997). This determines the number of children present in a family and as the needs of the family increase children have to work to augment family income (Rosenzweig & Evenson, 1977; Singh, 1997). The fertility rate is also taken as a supply factor such that families with more children (especially male) can supply more labour to field and increase their earnings (Chaudhuri, 1997a; Singh, 1997). This has been an important factor in rural areas mainly, where people always want to have more and more children to increase their family income (Singh, 2001).

Methodology

Sample

The study consists of total 35 sample points. It includes all the 28 states and 7 union territories (UTs) of India. The data is based on the reports of Census of India, 2001, IndiaStat website (a data source on Indian statistics), and CMIE (Centre for Monitoring Indian Economy) database. The data has been collected for the state/UT as a whole and also based on rural-urban and male/female characteristics wherever possible. The study is based on the most recent Census conducted in 2001. The data made variable by Census is based on total population and is believed to be the most reliable data among all the available ones. The measures used in the study are well recognised and acceptable. They have been taken from the government databases, so their descriptions are also known.

Measures

Dependent Variable - Child labour incidence (CLI):

CLI is measured as the proportion of main and marginal workers in the age group of 5-14 years to the total children in this age group. It is calculated for total population as well as rural, urban, male, and female population. The formula for each category is given below.

$$CLI_T = \frac{\text{Total Child Labour (5 - 14 yrs)}}{\text{Total Child Population (5 - 14 yrs)}}$$

$$CLI_R = \frac{\text{Rural Child Labour (5 - 14 yrs)}}{\text{Rural Child Population (5 - 14 yrs)}}$$

$$CLI_U = \frac{\text{Urban Child Labour (5 - 14 yrs)}}{\text{Urban Child Population (5 - 14 yrs)}}$$

$$CLI_M = \frac{\text{Male Child Labour (5 - 14 yrs)}}{\text{Male Child Population (5 - 14 yrs)}}$$

$$CLI_F = \frac{\text{Female Child Labour (5 - 14 yrs)}}{\text{Female Child Population (5 - 14 yrs)}}$$

In this classification on the basis of region, **urban areas** according to the Census of India 2001 mean: (a) All statutory places with a municipality, corporation, cantonment board or notified town area committee, etc. (b) A place satisfying the following three criteria simultaneously:

i) a minimum population of 5,000;

ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and

iii) a density of population of at least 400 per sq. km. (1,000 per sq. mile).

And the regions which do not meet these criteria are the rural areas.

Independent variables

Percentage children studying (PCS): It represents the educational forces that affect the involvement of children in workforce. It is the proportion of children in the age group (5-14 yrs) going for formal education by attending educational institution to the total population in this age group.

$$PCS_T = \frac{\text{Total Children going for Education (5-14 yrs)}}{\text{Total Child Population (5-14 yrs)}}$$

It has been calculated for all the categories separately. E.g., for rural area it is total children in the rural areas (in the age group 5-14 yrs) going to school divided by total child population of that age group in the rural areas.

Workforce Participation Rate (WFP): Work participation rate is defined as the percentage of total workers (main and marginal) to total population. It has been calculated for the age 15 years and above and has been computed separately for total, rural, urban, male, and female population of the state/UT. For illustration male workers participation rate of a state/UT is the total workers (main + marginal) in the above mentioned age group to the total population of that state/UT in this age group.

$$WFP_T = \frac{\text{Total Workers (15 yrs and above)}}{\text{Total Population (15 yrs and above)}}$$

Below poverty line (BPL): This variable represents the poverty related factor that pushes the children into labour force. The Planning Commission of India has been estimating the incidence of poverty at National and State level (both in rural and urban areas) since the Sixth Five Year Plan on the basis of the recommendations of the Task Force (1979) on projections of minimum needs and effective consumption demand. The Government finally adopted the methodology for estimating poverty to update the urban poverty line on the basis of Consumer Price Index for Industrial Workers alone instead of average of Consumer Price Index of Industrial Workers and Consumer Price Index of Urban Non-

manual Employees (CPI-UNME) (Joshi, 2002). BPL is available separately for rural and urban areas.

Per capita state domestic product (PSDP): It is the per head share of individuals of the total domestic product of the state. The state domestic product consists of the states' consumption expenditure, government expenditure, investments, and net exports in a year. It has been calculated at the constant base year of 1993-1994. This has been taken from the website of IndiaStat based on the reports of Economic Survey of India, 2001.

Fertility rate (FR): Fertility rate is, basically, the number of children that an average woman have in the age group 15-49 yrs. It has been taken from Guilmoto & Rajan (2002) who estimated the fertility rate of women in India based on the data of Census of India 2001.

Analyses

The child labour incidence in India has been studied at two levels: at the total state level, and then on the basis of categorization (rural vs. urban and males vs. females). The influence of five major factors on child labour incidence has been studied statistically using multiple regression as the analytical tool. These factors are related with various socio-economic forces. The analysis has been done separately at the state level and the two categories level. The dependent variable child labour incidence's natural logarithm has been taken to correct the heteroskedasticity problem. In the regression analysis, the issue of multi-collinearity has not emerged as a major problem as the value of variance inflation factor (VIF) is less than 3 in all cases.

Results & Discussions

Child Labour Incidence for Total Population

Table 2 presents means, standard deviations and correlations of all the six variables for the total population. Mean score of child labour incidence is 0.051 and standard

deviation is 0.030. This shows that overall the child labour in India is 5% of total child population. The mean scores of explanatory variables are: percentage studying (71.4%), workforce participation (39%), BPL (22.9%), per-capita state domestic product (Rs. 12069.057) and fertility rate (2.97). The correlations of the dependent variable with explanatory variables show that except for BPL, the linkages of all other variables are significant and are in the expected directions. The result of correlations between explanatory variables shows that correlations are significant at $p \leq 0.001$ level between certain variables: percentage studying and per-capita SDP (0.622), percentage studying and fertility rate (-0.816), percentage studying and BPL (-0.549), BPL and per-capita SDP (-0.631), BPL and fertility rate (0.541), and per-capita SDP and fertility rate (-0.582). Among these, correlation between percentage studying and fertility rate can create some issues in the analysis as it is above 0.80.

Table 2: Means, Standard Deviations, and Correlations for Total Population

No.	Variable	N	Mean	s.d.	1	2	3	4	5
1.	CLI_T	35	0.051	0.030					
2.	PCS_T	35	0.714	0.114	-0.404*				
3.	WFP_T	35	0.390	0.054	0.689***	0.034			
4.	BPL_T	35	0.229	0.127	0.259	-0.549***	-0.065		
5.	PSDP	35	12069.057	6066.59	-0.433**	0.622***	-0.042	-0.631***	
6.	FR	35	2.968	0.801	0.465**	-0.816***	-0.006	0.541***	-0.582***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

Regression analysis (shown in Table 3) has been done in two models. This difference in models is based on the inclusion and exclusion of percentage studying. This is done because of high correlation between percentage studying and fertility rate.

Models 1: Inclusion of percentage studying in the regression model

The model has adjusted R^2 of 0.801 and F value of 28.456 at $p \leq 0.001$ level of significance. The results show that child labour incidence for total population is significantly influenced by two factors: percentage studying and workforce participation. Percentage studying and workforce participation emerged as the significant factors at $p \leq 0.001$ level of significance with βs equal to -0.568 and 0.710 respectively. Percentage studying is having the expected negative effect and the affect of workforce participation is positive. Increase in percentage studying is expected to take children away from labour force to schools. The positive relation of workforce participation shows that child labour incidence is expected to increase with rise in workforce participation at the total state/UT level. The results are similar to earlier studies conducted at the total population level. Workforce participation emerged as significant factor affecting child labour incidence in the study by Lieten (2002) on the data collected in 50th Round of National Sample Survey (NSS). In Duraisamy (1997), literacy rate had a significant negative effect on child labour. Percentage studying had significant negative correlation with child labour in the study by Chaudhri (1997b).

Model 2: Exclusion of percentage studying from the regression model

The model has explanatory power of 0.700 and F value of 20.803 at $p \leq 0.001$ level of significance. The results also show that with the removal of percentage studying variable from the model fertility rate became significant with positive $\beta = 0.355$ at $p \leq 0.01$ level of significance. This shows that earlier percentage studying suppressed fertility rate factor. The positive link between fertility rate and child labour also confirms the results in

previous studies like one by Chaudhri (1997a) that with the increase in fertility the child labour incidence increases.

Table 2 showed high correlation of BPL and per-capita SDP with each other and with fertility. So we regressed the dependent variable with BPL and per-capita SDP separately and found them not to be significant in this case.

Table 3: Results of Regression Analysis for Total Population

Independent Variables	Dependent Variable $Ln(CLI_T)$	
	Model 1	Model 2
PCS_T	-0.568***	
WFP_T	0.710***	0.691***
BPL_T	-0.043	-0.155
PSDP	-0.034	0.069
FR	-0.025	0.355**
Overall Adjusted R^2	0.801	0.700
Overall Model F	28.456***	20.803***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

N = 35. Standardised regression coefficients when all variables of the model are entered into the equation are shown.

Child Labour Incidence for Rural Population

Table 4 presents the means, standard deviations and correlations at the rural level. Mean score of child labour incidence is 0.060 and standard deviation is 0.036. Rate of child labour in rural India is 1% higher than total population level and the variance is also

more. Result clearly depicts that the child labour incidence is higher in the case of rural India than total population. Mean scores of explanatory variables are: percentage studying (71.6%), workforce participation (41.4%), and BPL (23.9%). In our data, per-capita state domestic product and fertility rate is same for all levels of aggregation. The correlation of dependent variable child labour incidence with percentage studying, workforce participation, BPL, per-capita state domestic product and fertility rate is significant and in the expected direction. Variables between which correlations are significant at $p \leq 0.001$ level are: percentage studying and per-capita SDP (0.562), percentage studying and fertility rate (-0.621), per-capita SDP and BPL (-0.639), per-capita SDP and fertility rate (-0.582), and BPL and fertility rate (0.544). Percentage studying has high correlation with all the other explanatory variables and so the regression analysis has been divided into two models. The difference between these two models is based on the inclusion and exclusion of percentage studying.

Table 4: Means, Standard Deviations, and Correlations for rural population

No.	Variable	N	Mean	s.d.	1	2	3	4	5
1.	CLI_R	35	0.060	0.039					
2.	PCS_R	35	0.716	0.204	-0.387*				
3.	WFP_R	35	0.414	0.066	0.640***	-0.003			
4.	BPL_R	35	0.239	0.154	0.369*	-0.342**	0.023		
5.	PSDP	35	12069.057	6066.59	-0.407*	0.562***	0.004	-0.639***	
6.	FR	35	2.968	0.801	0.449**	-0.621***	-0.046	0.544***	-0.582***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

Models 1: Inclusion of percentage studying in the regression model

The regression analysis in Table 5 shows that the variables in the model explained 0.797 of the variation in the dependent variable and the F value of the model is 27.664 at $p \leq 0.001$ level of significance. The results show that child labour incidence in rural India is significantly influenced by two factors at the rural level: percentage studying and workforce participation. Percentage studying is significantly negative with $\beta = -0.438$ at $p \leq 0.001$ level of significance. Workforce participation is significantly positive at $p \leq 0.001$ level with $\beta = 0.663$. These two results are as expected.

Model 2: Exclusion of percentage studying from the regression model

Adjusted R^2 of the model is 0.687 and F value is 19.645 at 0.001 level of significance. The results also show that when percentage studying is not included in the model, fertility rate becomes significant with positive $\beta = 0.357$ at the 0.01 level of significance and workforce participation rate is still highly significant at 0.001 level with $\beta = 0.667$. This shows that earlier percentage studying suppressed fertility rate factor.

As such there are not many studies focussing on child labour incidence in rural India. The results show that the critical factors affecting child labour incidence in the rural areas are the educational involvement of children, the workforce participation, and the fertility.

There is high correlation of BPL and per-capita SDP with each other and with fertility (as shown in Table 4). So we regressed the dependent variable with BPL and per-capita SDP separately and found BPL significant at $p \leq 0.05$ level and per-capita SDP significant at $p \leq 0.01$ level in the case of rural population.

Table 5: Results of Regression Analysis for Rural Population

Independent Variables	Dependent Variable Ln(CLI_R)	
	Model 1	Model 2
PCS_R	-0.438***	
WFP_R	0.663***	0.677***
BPL_R	-0.018	-0.187
PSDP	0.144	0.068
FR	0.141	0.357**
Overall Adjusted R^2	0.797	0.687
Overall Model F	27.664***	19.645***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

N = 35. Standardised regression coefficients when all variables of the model are entered into the equation are shown.

Child Labour Incidence at Urban Level

Table 6 presents the result of means, standard deviations and correlations at the urban level. Mean score of child labour incidence is 0.022 and standard deviation is 0.014. This shows that the rate of child labour in urban India is 2.2 %, which is far lower than that of total and rural population. This is due to the difference in basic conditions of rural and urban area and justifies our approach of analysing rural and urban data separately. Among explanatory variables, only percentage studying, workforce participation, and BPL change for this analysis and their respective values are 77.7%, 33.1%, and 17.4%. The mean value in Table 6 also shows that the participation of workers over 15 years is comparatively less in urban areas than the total and rural population. The percentage of

children studying is far more than that of the rural areas. The correlation of dependent variable with workforce participation is significant and in the expected direction and is insignificant with all the other variables. The result of correlation between explanatory variables shows that there are variables which are correlated at $p \leq 0.001$ level of significance: percentage studying and workers participation (0.439), percentage studying and fertility rate (-0.758) and per-capita SDP and fertility rate (-0.582). Due to high correlation between percentage studying and fertility rate two models of regression have been taken: one that includes percentage studying and the other that does not.

Table 6: Means, Standard Deviations, and Correlations for Urban Population

No.	Variable	N	Mean	s.d.	1	2	3	4	5
1.	CLI_U	35	0.022	0.014					
2.	PCS_U	35	0.777	0.049	-0.006				
3.	WFP_U	35	0.331	0.046	0.495**	0.439**			
4.	BPL_U	35	0.174	0.115	-0.308	-0.275	-0.514**		
5.	PSDP	35	12069.057	6066.59	-0.185	0.423*	0.334*	-0.372*	
6.	FR	35	2.968	0.801	0.160	-0.758***	-0.357*	0.262	-0.582***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

Models 1: Inclusion of percentage studying in the regression model

Regression analysis in Table 7 shows that adjusted R^2 is 0.338 and F value is 4.476 at $p \leq 0.01$ level of significance. The results show that child labour incidence in urban India is significantly influenced by just two factors: percentage studying and workforce participation. Both the relationships are significant at $p \leq 0.01$ level of significance.

Percentage studying has significant negative relationship with child labour incidence (β= -0.517) and workforce participation has significant positive relationship (β= 0.600).

Model 2: Exclusion of percentage studying from the regression model

Here adjusted R^2 = 0.242 and F value = 3.710 at 0.01 level of significance. In this model just a single factor is significant - workforce participation with β = 0.497 at $p \leq 0.01$ level of significance. Unlike rural areas, fertility rate is not a significant factor in urban areas. The major difference that emerges analysing urban level data is that percentage studying and workforce participation rate are more important.

Table 7: Results of Regression Analysis for Urban Population

Independent Variables	Dependent Variable $Ln(CLI_U)$	
	Model 1	Model 2
PCS_U	-0.517**	
WFP_U	0.600**	0.497**
BPL_U	-0.202	-0.167
PSDP	-0.161	0.157
FR	-0.050	0.324
Overall Adjusted R^2	0.338	0.242
Overall Model F	4.476**	3.710**

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

N = 35. Standardised regression coefficients when all variables of the model are entered into the equation are shown.

Child Labour Incidence for Males

As seen in Table 8, mean score of child labour incidence is 0.051 and standard deviation is 0.027 for male population. This figure is similar to the rate of child labour at the total level. In case of explanatory variables, mean scores of percentage studying and workforce participation are 73.6 % and 55.1% respectively. Data for BPL is not differentiated on the basis of gender and so it is same as the one in total population. As expected workforce participation is higher for males than the average seen in Table 2 for the total population. The correlation of child labour incidence with percentage studying, per-capita state domestic product, and fertility rate is significant and in the expected direction. Interestingly, workforce participation and BPL does not have a significant correlation with the dependent variable. Explanatory variables that are correlated at $p \leq 0.001$ level of significance are: The result of correlation between explanatory variables shows that there are certain variables which are significant: percentage studying and per-capita SDP (0.589), percentage studying and fertility rate (-0.814), percentage studying and BPL (-0.590), per-capita SDP and BPL (-0.631), BPL and fertility rate (0.541), and per-capita SDP and fertility rate (-0.582). Two models of regression are taken due to high correlation between percentage studying and fertility rate; one model with percentage studying and the other one without percentage studying.

Table 8: Means, Standard Deviations, and Correlations for Male Population

No.	Variable	N	Mean	s.d.	1	2	3	4	5
1.	CLI_M	35	0.051	0.027					
2.	PCS_M	35	0.736	0.1024	-0.425*				
3.	WFP_M	35	0.511	0.048	0.010	0.379*			
4.	BPL_T	35	0.229	0.127	0.285	-0.590***	-0.427*		
5.	PSDP	35	12069.057	6066.59	-0.438**	0.589***	0.412*	-0.631***	
6.	FR	35	2.968	0.801	0.465**	-0.814***	-0.467**	0.541***	-0.582***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

Model 1: Inclusion of percentage studying in the regression model

Regression analysis shows adjusted R^2 of 0.333 and F value of 4.397 at $p \leq 0.01$ level of significance. The results show that child labour incidence for male population is significantly influenced by just one factor - workforce participation at $p \leq 0.05$ level of significance. This is significant positive relationship with $\beta = 0.342$.

Model 2: Exclusion of percentage studying from the regression model

In this model R^2 is 0.290 and F value is 4.463 at $p \leq 0.01$ level of significance. In the absence of percentage studying, fertility rate ($\beta = 0.505$) emerged as significant variable along with workers participation ($\beta = 0.369$), both positively related with child labour incidence at $p \leq 0.05$ level of significance. The results show that fertility and workforce participation are important factors for male population. These results are as expected, particularly when seen in the context of Indian society where work is usually associated with the male members of the family.

Table 8 shows that there is high correlation of BPL and per-capita SDP with each other and with fertility. So we regressed the dependent variable with BPL and per-capita SDP separately and found per-capita SDP significant at $p \leq 0.05$ level in this case.

Table 9: Results of Regression Analysis for Male Population

Independent Variables	Dependent Variable $Ln(CLI_M)$	
	Model 1	Model 2
PCS_M	-0.441	
WFP_M	0.342*	0.369*
BPL_T	-0.232	0.001
PSDP	-0.079	-0.277
FR	0.203	0.505*
Overall Adjusted R^2	0.333	0.290
Overall Model F	4.397**	4.463**

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

N = 35. Standardised regression coefficients when all variables of the model are entered into the equation are shown.

Child Labour Incidence for Females

Table 10 presents the result of means, standard deviations and correlations at the urban level. Mean score of child labour incidence is 0.051 and standard deviation is 0.034. Though the mean for female population is similar to the mean for the males, variance in the case of females is higher compared to that of males. This is due to the differences among the sample units (states/UTs) regarding the female child involvement in workforce.

Mean scores of explanatory variables like percentage studying and workforce participation are 68.9 % and 25.6% respectively. Mean values of explanatory variables show that there is big difference in the percentage children studying and the workforce participation rate between males and females. The correlations of dependent variable with percentage studying, workforce participation, per-capita state domestic product, and fertility rate are significant and are in the expected direction. BPL is not significant in this case. Explanatory variables that are correlated at $p \leq 0.001$ level of significance are: per-capita SDP and fertility rate (-0.582), BPL and fertility rate (0.541), per-capita SDP and percentage studying (0.633), per-capita SDP and BPL (-0.631), and percentage studying and fertility rate (-0.799). There is high correlation between percentage studying and fertility rate and so two models of regression, similar to other cases, are taken. The correlations among explanatory variables differ a lot from the case of male population. The major difference is in the correlation between per-capita SDP and work force participation, which is significant negative for females and significant positive for males. This shows that the workforce participation of females is due to economic needs which reduce with the improvement in per-capita SDP. This is expected in the context of Indian society where participation of women in workforce is not much appreciated. According to Chaudhri (1997b), Indian women are mainly working to provide monetary support to the family.

Table 10: Means, Standard Deviations, and Correlations for Female Population

No.	Variable	N	Mean	s.d.	1	2	3	4	5
1.	CLI_F	35	0.051	0.034					
2.	PCS_F	35	0.689	0.130	-0.391*				
3.	WFP_F	35	0.256	0.093	0.863***	-0.180			
4.	BPL_T	35	0.229	0.127	0.229	-0.498**	0.222		
5.	PSDP	35	12069.057	6066.59	-0.417*	0.633***	-0.339*	- 0.631***	
6.	FR	35	2.968	0.801	0.451***	-0.799***	0.254	0.541***	-0.582***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

Model 1: Inclusion of percentage studying in the regression model

In this model, adjusted R^2 is 0.814 and F value is 30.843 at $p \leq 0.001$ level of significance. The results show that child labour incidence is significantly influenced by two factors in the case of females: percentage studying and workforce participation of females. Workforce participation of females is positively significant at $p \leq 0.001$ level with child labour incidence (β= 0.776). Percentage studying showed significant negative relationship with child labour incidence (β= -0.660) at $p \leq 0.001$ level. Unlike male population, child labour incidence in female population is significantly affected by their involvement in studies. The result of this study confirms the inference given by Sharma & Sharma (1997) that female child's involvement in education reduces their chance of entering workforce at a very small age. Also the explanatory power of this model is much higher compared to that of male population, which shows that these variables influence female child labour much more than male child labour.

Model 2: Exclusion of percentage studying from the regression model

The results show adjusted R^2 of 0.666 and F value of 17.938 at $p \leq 0.001$ level of significance. In this model there is just a single significant factor, i.e., workers participation with β value of 0.723. Contrary to expectation, fertility rate is not significant. This shows that fertility rate affects the participation of male children more than female children.

There is another major dimension to be highlighted from these results. In the case of female child population there is big influence of female workforce participation on female child labour based on pull strategy. As more and more females enter labour force then due to lower wage rates even children are pulled along with mothers. This result is similar to that of Lieten (2002).

Table 10 shows that there is high correlation of BPL and per-capita SDP with each other and with fertility. So we regressed the dependent variable with BPL and per-capita SDP separately and found per-capita SDP significant at $p \leq 0.01$ level in this case.

Table 11: Results of Regression Analysis for Female Population

Independent Variables	Dependent Variable Ln(CLI_F)	
	Model 1	Model 2
PCS_F	-0.660***	
WFP_F	0.776***	0.723***
BPL_T	0.118	-0.074
PSDP	0.004	-0.015
FR	-0.217	0.222
Overall Adjusted R^2	0.814	0.666
Overall Model F	30.843***	17.938***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; two-tailed tests.

N = 35. Standardised regression coefficients when all variables of the model are entered into the equation are shown.

Summary

The above stated results depict the differences in the factors that affect child labour incidence in five different categories mentioned. These differences prove the surmise stated in the beginning of the paper that there are variations in the factors affecting child labour across the three levels of aggregation. Table 12 a and b present the summary of the factors in Models 1 and 2 for total, rural, urban, male, and female population. Workforce participation rate was positively significant in all cases. Percentage studying emerged as a significant factor in all cases except males. The main difference between rural and urban population was that the fertility rate was significant in case of rural but not in case of urban. There are differences between the male and female population too. In the case of male population only workers participation is significant in Model 1 whereas for female population, in addition to workforce participation, percentage female children studying is also highly significant. Tilak (1994) had discussed that there are biases and variations in the schooling status between male and female children. This disparity may add to the differing influence of education on male and female population. Also in Model 2 fertility rate is significantly affecting the male child population but not the female child population.

Table 12a: Significant variables for all the five cases (model 1)

No.	Explanatory variable	Total population	Rural population	Urban population	Male population	Female population
1	Percentage studying	-ve	-ve	-ve	NS	-ve
2	Workforce participation	+ve	+ve	+ve	+ve	+ve
3	Below poverty line	NS	NS	NS	NS	NS
4	Fertility rate	NS	NS	NS	NS	NS
5	Per-capita SDP	NS	NS	NS	NS	NS

Table 12b: Significant variables for all the five cases (model 2)

No.	Explanatory variable	Total population	Rural population	Urban population	Male population	Female population
1	Workforce participation	+ve	+ve	+ve	+ve	+ve
2	Below poverty line	NS	NS	NS	NS	NS
3	Fertility rate	+ve	+ve	NS	+ve	NS
4	Per-capita SDP	NS	NS	NS	NS	NS

Conclusion

Though there are lot of discussions globally, related to the eradication of child labour, the crucial issue in this context is to understand the differences that lies in the conceptualisation of child labour in different nations. Adopting similar practices to eradicate it may fetch little or no result. In this regard the important aspect is to identify the key factors that create differences and then plan mechanisms to reduce participation rate of children in workforce. In order to develop specific policies related to eradication of child labour there is need to understand the specific effects of influencing factors in a particular context or situation, otherwise most of the times it has been seen that all the resources and efforts simply go waste. This brings us to an important question "which factor should be the focus of policy makers for controlling child labour?" The study tries to provide an answer to this question that there is no one measure which if considered by policy-makers can totally control child labour. Different situations demand different forms of support and accordingly policies should be developed. However one can say with full confidence that improving educational policies will reduce child labour. But the educational policies should not lead to further increase in poverty rather it should lead to better job opportunities and improvement of the financial condition of the families. Positive affect of workforce participation is more difficult to deal with at policy level. Stringent laws and their proper enforcement are needed to reduce this pull effect. This study also showed that poverty factor influences child labour mainly in case of rural population. Hence poverty alleviation measures should be effective in reducing child labour in rural areas.

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